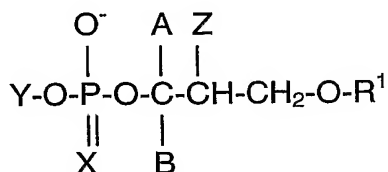


WHAT IS CLAIMED IS:

1. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, A is selected from the group consisting of hydrogen, hydroxyl, and halogen, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, Z is selected from the group consisting of hydrogen, hydroxyl, halogen, haloalkyl, haloalkyloxy, alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, and alkynyloxy, X is selected from the group consisting of oxygen and sulfur, Y is selected from the group consisting of hydrogen, halogen, saturated and unsaturated haloalkyl, saturated and unsaturated haloalkyloxy, alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, substituted aryloxy, and lower alicyclic-oxy groups which are optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof, and when X is oxygen and A and B are both hydrogen, then Y is not hydrogen.

2. The compound of claim 1, wherein Y is selected from the group consisting of halogen, saturated and unsaturated haloalkyl, saturated and unsaturated haloalkyloxy, where a halo group is selected from the group consisting of fluoro, chloro, bromo, and iodo; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

3. The compound of claim 1, wherein Y is selected from the group consisting of saturated or unsaturated, straight or branched chain of alkoxy, acyl, aryl, heteroaryl,

and aralkyl, having six or more carbon atoms and optionally being substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

4. The compound of claim 1, wherein Y is an alicyclic ring selected from the group consisting of one, di-, tri-, tetra-, penta-, hexahydroxyhexyloxy, and derivatives thereof.

5. The compound of claim 1, wherein X is sulfur.

6. The compound of claim 5, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

7. The compound of claim 6, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-myristyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-palmityl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-stearyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-oleyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-linoleyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-lauryl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-myristyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-palmityl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-stearyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-oleyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

8. The compound of claim 5, wherein the compound is selected from the group consisting of 2-alkyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-acyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-acyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

9. The compound of claim 8, wherein the compound is selected from the group consisting of 2-lauryl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-myristyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-palmityl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-stearyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-oleyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-linoleyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-linolenyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-eleosteryl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-lauryl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-myristyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-palmityl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-steaoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-oleyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-linoleyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-linolenyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-eleosteryl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-lauroyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-myristoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-palmitoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-stearoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-oleoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-linoleoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-linolenoyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-eleosteroyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-lauroyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-myristoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-palmitoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-stearoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-oleoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-linoleoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-

linolenoyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-eleosteroyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

10. The compound of claim 1, wherein Y is halogen selected from the group consisting of fluoro, chloro, bromo, and iodo.

11. The compound of claim 10, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, and derivatives thereof.

12. The compound of claim 11, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-alkyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-alkynyl-sn2-O-methyl-rac-

glycero-3-bromophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-bromophosphate, and derivatives thereof.

13. The compound of claim 11, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-myristyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-palmityl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-stearyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-oleyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-linoleyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-lauryl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-myristyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-palmityl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-stearyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-oleyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-myristoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-palmitoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-stearoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-oleoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-linoleoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-linolenoyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-eleosteroyl-sn2-hydroxide-rac-glycero-3-fluorophosphate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-palmitoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-stearoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-oleoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-linoleoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-linolenoyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, 1-eleosteroyl-sn2-O-methyl-rac-glycero-3-fluorophosphate, and derivatives thereof.

14. The compound of claim 11, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-myristyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-palmityl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-stearyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-oleyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-linoleyl-sn2-hydroxide-rac-glycero-

3-bromophosphate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-lauryl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-myristyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-palmityl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-stearyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-oleyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-lauroyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-myristoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-palmitoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-stearoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-oleoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-linoleoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-linolenoyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-eleosteroyl-sn2-hydroxide-rac-glycero-3-bromophosphate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-palmitoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-stearoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-oleoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-linoleoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-linolenoyl-sn2-O-methyl-rac-glycero-3-bromophosphate, 1-eleosteroyl-sn2-O-methyl-rac-glycero-3-bromophosphate, and derivatives thereof.

15. The compound of claim 1, wherein R¹ is selected from the group consisting of saturated or unsaturated, substituted or unsubstituted, straight or branched chain of alkyl, alkenyl, alkylnyl, and acyl, having six or more carbon atoms; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

16. The compound of claim 15, wherein R¹ comprises an alkyl or acyl having nine or more carbon atoms selected from the group consisting of saturated carbon-carbon bonds, one unsaturated carbon bond, two or more unsaturated carbon bonds, and derivatives thereof.

17. The compound of claim 1, wherein Z is selected from the group consisting of hydroxyl, halogen, haloakyl, haloalkyloxy, alkoxy, alkenyloxy, and alkynyloxy.
18. The compound of claim 17, wherein Z is selected from the group consisting of hydroxyl and methoxyl.
19. The compound of claim 18, wherein X is sulfur.
20. The compound of claim 19, wherein Y is an alicyclic ring selected from the group consisting of one, di-, tri-, tetra-, penta-, hexahydroxyhexyloxy, and derivatives thereof.
21. The compound of claim 1, wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl and acyl, Z is a hydroxyl group, and Y is selected from the group consisting of halogen, saturated and unsaturated haloakyl, saturated and unsaturated haloalkyloxy, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, which are optionally substituted with one or more hydroxy or lower alkoxy groups, and derivatives thereof.
22. The compound of claim 1, wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl and acyl, Z is a methoxyl group, and Y is selected from the group consisting of halogen, saturated and unsaturated haloakyl, saturated and unsaturated haloalkyloxy, alkoxy, alkenyloxy, alkynyloxy, aryl, heteroaryl, aryloxy, and lower alicyclic-oxy groups which are optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.
23. The compound of claim 22, wherein Y is an alicyclic ring selected from the group consisting of one, di-, tri-, tetra-, penta-, hexahydroxyhexyloxy, and derivatives thereof.

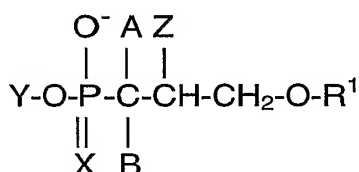
24. The compound of claim 1, wherein A and B are each independently selected from the group consisting of hydrogen, hydroxyl, and halogen, and the compound comprises a halogen group selected from the group consisting of fluoro, chloro, bromo, and iodo.

25. The compound of claim 24, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphate, 1-alkenyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphate, 1-alkynyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphate, 1-acyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphate, 1-alkyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphate, 1-alkenyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphate, 1-alkynyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphate, 1-acyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphate, 1-alkyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphothionate, 1-acyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphothionate, 1-alkyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphothionate, 1-acyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphothionate, 1-alkyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-sn3-halo-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-sn3-halo-rac-glycero-3-phosphonate and derivatives thereof.

26. The compound of claim 24, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphate, 1-alkenyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphate, 1-alkynyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphate, 1-acyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphate, 1-alkyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphate, 1-alkenyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphate, 1-alkynyl-sn2-O-methyl-sn3-dihalo-

rac-glycero-3-phosphate, 1-acyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphate, 1-alkyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphothionate, 1-acyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphothionate, 1-acyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphothionate, 1-alkyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-sn3-dihalo-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-sn3-dihalo-rac-glycero-3-phosphonate and derivatives thereof.

27. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, A is selected from the group consisting of hydrogen, hydroxyl, and halogen, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, Z is selected from the group consisting of hydrogen, hydroxyl, halogen, haloalkyl, haloalkyloxy, alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, and alkynyloxy, X is selected from the group consisting of oxygen and sulfur, Y is selected from the group consisting of halogen, saturated and unsaturated haloalkyl, saturated and unsaturated haloalkyloxy, alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl,

aralkyloxy, substituted aryloxy, and lower alicyclic-oxy groups which are optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

28. The compound of claim 27, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-phosphonate, and derivatives thereof.

29. The compound of claim 28, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-myristyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-palmityl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-stearyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-oleyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-linoleyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-lauryl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-myristyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-palmityl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-stearyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-oleyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-lauroyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-myristoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-palmitoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-stearoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-oleoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-linoleoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-linolenoyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-eleosteroyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-palmitoyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-stearoyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-oleoyl-sn2-O-

methyl-rac-glycero-3-phosphonate, 1-linoleoyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-linolenoyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-phosphonate, and derivatives thereof.

30. The compound of claim 27, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof, wherein the compound comprises a halogen group selected from the group consisting of fluoro, chloro, bromo, and iodo.

31. The compound of claim 30, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-myristyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-palmityl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-stearyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-oleyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-linoleyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-palmityl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-stearyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-oleyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-lauroyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-myristoyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-palmitoyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-stearoyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-oleoyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-linoleoyl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-linolenoyl-sn2-

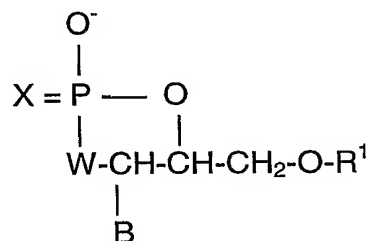
hydroxide-rac-glycero-3-fluorophosphonate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-fluorophosphonate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-palmitoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-stearoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-oleoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-linoleoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-linolenoyl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-fluorophosphonate, and derivatives thereof.

32. The compound of claim 30, wherein the compound is selected from the group consisting of 1-lauryl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-myristyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-palmityl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-stearyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-oleyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-linoleyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-linolenyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-lauryl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-myristyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-palmityl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-stearyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-oleyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-linoleyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-linolenyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-eleosteryl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-lauroyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-myristoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-palmitoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-stearoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-oleoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-linoleoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-linolenoyl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-eleosteryl-sn2-hydroxide-rac-glycero-3-bromophosphonate, 1-lauroyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-myristoyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-palmitoyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-stearoyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-oleoyl-sn2-O-methyl-rac-glycero-3-

bromophosphonate, 1-linoleoyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-linolenoyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, 1-elesteroyl-sn2-O-methyl-rac-glycero-3-bromophosphonate, and derivatives thereof.

33. The compound of claim 27, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-thiophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-thiophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-thiophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-thiophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-thiophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-thiophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-thiophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-thiophosphonate, and derivatives thereof.

34. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, W is oxygen or a bond, X is selected from the group consisting of oxygen and sulfur; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

35. The compound of claim 34, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-acyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-

glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

36. The compound of claim 34, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

37. The compound of claim 34, wherein B is a halogen selected from the group consisting of fluoro, chloro, bromo, and iodo.

38. A pharmaceutical composition for treating a disease, comprising a therapeutically effective amount of the compound of claim 1 and a pharmaceutically acceptable carrier or excipient.

39. The pharmaceutical composition of claim 38, wherein the disease comprises ovarian cancer, androgen insensitive prostate cancer, or colon cancer.

40. A pharmaceutical composition for treating a disease, comprising a therapeutically effective amount of the compound of claim 27 and a pharmaceutically acceptable carrier or excipient.

41. The pharmaceutical composition of claim 39, wherein the disease comprises ovarian cancer, androgen insensitive prostate cancer, or colon cancer.

42. A pharmaceutical composition for treating a disease, comprising a therapeutically effective amount of the compound of claim 34 and a pharmaceutically acceptable carrier or excipient.

43. The pharmaceutical composition of claim 42, wherein the disease comprises ovarian cancer, androgen insensitive prostate cancer, or colon cancer.

44. A method for treating a disease, comprising administering a pharmaceutically effective amount of the compound of claim 1 to a subject.

45. The method of claim 44, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

46. The method of claim 44, wherein the compound is selected from the group consisting of 2-alkyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-acyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-acyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

47. The method of claim 44, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-

halophosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof.

48. The method of claim 44, wherein the compound is selected from the group consisting of 1-lauroyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-myristoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-palmitoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-stearoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-oleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linoleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linolenoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-eleosteroyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, and derivatives thereof.

49. The method of claim 44, wherein the compound is selected from the group consisting of 1-acyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauroyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmitoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-eleosteroyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

50. The method of claim 44, wherein the compound is selected from the group consisting of 1-alkyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmityl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-eleosteryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

51. The method of claim 44, wherein the disease comprises a cancer disease.

52. The method of claim 51, wherein the cancer disease is selected from the group consisting of ovarian cancer, androgen insensitive prostate cancer, and colon cancer.

53. A method for treating a disease, comprising administering a pharmaceutically effective amount of the compound of claim 27 to a subject.

54. The method of claim 53, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-phosphonate, and derivatives thereof.

55. The method of claim 53, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-

halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof, where the compound comprises a halogen group selected from the group consisting of fluoro, chloro, bromo, and iodo.

56. The method of claim 53, wherein the disease comprises a cancer disease.

57. A method for treating a disease, comprising administering a pharmaceutically effective amount of the compound of claim 34 to a subject.

58. The method of claim 57, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-acyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

59. The method of claim 57, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

60. The method of claim 57, wherein the disease comprises a cancer disease.

61. A method for treating an androgen insensitive prostate cancer, comprising administering a pharmaceutically effective amount of a compound of a LPA derivative to a subject.

62. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

63. The method of claim 61, wherein the compound is selected from the group consisting of 2-alkyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-acyl-sn-1-hydroxide-rac-glycero-3-phosphothionate, 2-alkyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkenyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-alkynyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, 2-acyl-sn-1-O-methyl-rac-glycero-3-phosphothionate, and derivatives thereof.

64. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate,

1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof.

65. The method of claim 61, wherein the compound is selected from the group consisting of 1-lauroyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-myristoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-palmitoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-stearoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-oleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linoleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linolenoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-eleosteryl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, and derivatives thereof.

66. The method of claim 61, wherein the compound is selected from the group consisting of 1-acyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauroyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmitoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-eleosteryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

67. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmityl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

glycerol)], 1-eleosteryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

68. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-phosphonate, and derivatives thereof.

69. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof, where the compound comprises a halogen group selected from the group consisting of fluoro, chloro, bromo, and iodo.

70. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-acyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

71. The method of claim 61, wherein the compound is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-

cyclic-glycerol-3-phosphonate, 1-alkyl-sn2,3-cyclic-glycerol-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycerol-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycerol-3-phosphonate, 1-acyl-sn2,3-cyclic-glycerol-3-phosphonate, and derivatives thereof.

72. A method for treating a cancer disease, comprising administering a pharmaceutically effective amount of a LPA derivative to bind to a specific subtype of LPA receptor and inhibit cell growth.

73. The method of claim 72, wherein the cancer disease comprises ovarian cancer, androgen insensitive prostate cancer, or colon cancer.

74. The method of claim 72, wherein the LPA derivative is selected from the group consisting of DPEL, lysophosphatidylglycerol, and their derivatives.

75. The method of claim 72, wherein the specific subtype of LPA receptor is selected from the group consisting of LPA1, LPA2, LPA3, and homologs thereof.

76. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycerol-3-phosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycerol-3-phosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycerol-3-phosphothionate, 1-acyl-sn2-hydroxide-rac-glycerol-3-phosphothionate, 1-alkyl-sn2-O-methyl-rac-glycerol-3-phosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycerol-3-phosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycerol-3-phosphothionate, and derivatives thereof.

77. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 2-alkyl-sn-1-hydroxide-rac-glycerol-3-phosphothionate, 2-alkenyl-sn-1-hydroxide-rac-glycerol-3-phosphothionate, 2-alkynyl-sn-1-hydroxide-rac-glycerol-3-phosphothionate, 2-acyl-sn-1-hydroxide-rac-glycerol-3-phosphothionate, 2-alkyl-sn-1-O-methyl-rac-glycerol-3-phosphothionate, 2-alkenyl-sn-1-O-methyl-rac-glycerol-3-phosphothionate, 2-alkynyl-sn-1-O-methyl-rac-glycerol-3-phosphothionate, 2-acyl-sn-1-O-methyl-rac-glycerol-3-phosphothionate, and derivatives thereof.

78. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphothionate, 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof.

79. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-lauroyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-myristoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-palmitoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-stearoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-oleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linoleoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-linolenoyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, 1-eleosteroyl-sn2-O-methyl-rac-glycero-D-3-deoxy-myo-inositol-3-phosphate, and derivatives thereof.

80. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-acyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauroyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmitoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenoyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-eleosteryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

81. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-lauryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-myristyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-palmityl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-stearyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-oleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linoleyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-linolenyl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], 1-eleosteryl-2-hydroxy-sn-glycero-3-[phospho-rac-(1-glycerol)], and derivatives thereof.

82. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-phosphonate, 1-alkyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-phosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-phosphonate, and derivatives thereof.

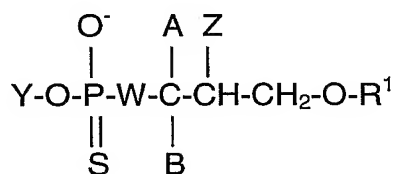
83. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-acyl-sn2-hydroxide-rac-glycero-3-halophosphonate, 1-alkyl-sn2-

O-methyl-rac-glycero-3-halophosphonate, 1-alkenyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-alkynyl-sn2-O-methyl-rac-glycero-3-halophosphonate, 1-acyl-sn2-O-methyl-rac-glycero-3-halophosphonate, and derivatives thereof, where a halo group is selected from the group consisting of fluoro, chloro, bromo, and iodo.

84. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-acyl-sn2,3-cyclic-glycero-3-phosphothionate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

85. The method of claim 72, wherein the LPA derivative is selected from the group consisting of 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkenyl-sn2,3-cyclic-glycero-3-phosphonate, 1-alkynyl-sn2,3-cyclic-glycero-3-phosphonate, 1-acyl-sn2,3-cyclic-glycero-3-phosphonate, and derivatives thereof.

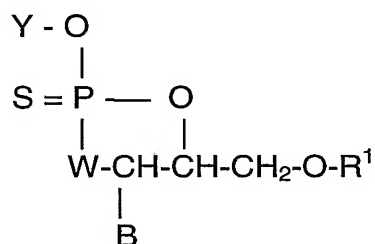
86. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, A is selected from the group consisting of hydrogen, hydroxyl, and halogen, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, W is oxygen or a bond, Z is selected from the group consisting of halogen, haloalkyl, haloalkyloxy, alkyl, alkenyl, alkynyl, saturated

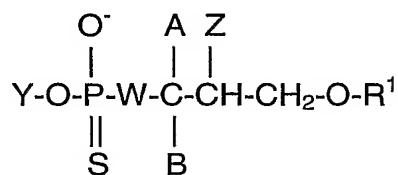
acyl, unsaturated acyl, alkoxy, alkenyloxy, and alkynyloxy, Y is selected from the group consisting of hydrogen, halogen, saturated and unsaturated haloalkyl, saturated and unsaturated haloalkyloxy, alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, substituted aryloxy, and lower alicyclic-oxy groups which are optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

87. A compound having the formula:



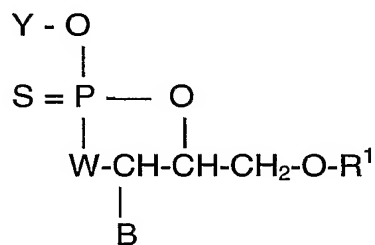
wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, W is oxygen or a bond, Y is selected from the group consisting of halogen, saturated and unsaturated haloalkyl, saturated and unsaturated haloalkyloxy, alkyl, alkenyl, alkylanyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, substituted aryloxy, and lower alicyclic-oxy groups which are optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

88. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, A is selected from the group consisting of hydrogen, hydroxyl, and halogen, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, W is oxygen or a bond, Z is selected from the group consisting of halogen, haloalkyl, haloalkyloxy, alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, and alkynyloxy, Y is selected from the group consisting of cyano alkyl, cyano alkenyl, cyano alkynyl, cyano acyl, cyano alkoxy, cyano alkenyloxy, cyano alkynyloxy, cyano aryl, cyano aryloxy, cyano heteroaryl, cyano heteroaryloxy, cyano aralkyl, cyano aralkyloxy, and lower cyano alicyclic-oxy optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

89. A compound having the formula:



wherein R¹ is selected from the group consisting of alkyl, alkenyl, alkynyl, saturated acyl, unsaturated acyl, alkoxy, alkenyloxy, alkynyloxy, aryl, aryloxy, heteroaryl, heteroaryloxy, aralkyl, aralkyloxy, B is selected from the group consisting of hydrogen, hydroxyl, and halogen, W is oxygen or a bond, Y is selected from the group consisting of cyano alkyl, cyano alkenyl, cyano alkynyl, cyano acyl, cyano alkoxy, cyano alkenyloxy, cyano alkynyloxy, cyano aryl, cyano aryloxy, cyano heteroaryl, cyano heteroaryloxy, cyano aralkyl, cyano aralkyloxy, and lower cyano alicyclic-oxy optionally substituted with one or more hydroxy or lower alkoxy groups; or a mimetic, stereoisomer, enantiomer, or pharmaceutically acceptable salt thereof.

90. A pharmaceutical composition for treating a disease, comprising a therapeutically effective amount of the compound of claims 86, 87, 88, or 89 and a pharmaceutically acceptable carrier or excipient.

91. The pharmaceutical composition of claim 90, wherein the disease comprises ovarian cancer, androgen insensitive prostate cancer, or colon cancer.

92. A method for treating a disease, comprising administering a pharmaceutically effective amount of the compound of claims 86, 87, 88, or 89 to a subject.

93. A method for treating an androgen insensitive prostate cancer, comprising administering a pharmaceutically effective amount of the compound of claims 86, 87, 88, or 89 to a subject.

94. A method for treating a cancer disease, comprising administering a pharmaceutically effective amount of the compound of claims 86, 87, 88, or 89 to bind to a specific subtype of LPA receptor and inhibit cell growth.